

Translation

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PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)



Applicant's or agent's file reference DP-934PCT	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/JP2003/003851	International filing date (day/month/year) 27 March 2003 (27.03.2003)	Priority date (day/month/year) 08 April 2002 (08.04.2002)
International Patent Classification (IPC) or national classification and IPC H03F 3/60, 3/68, H03H 11/28		
Applicant NEC CORPORATION		

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1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of <u>5</u> sheets, including this cover sheet. <input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT). These annexes consist of a total of _____ sheets.
3. This report contains indications relating to the following items: I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input type="checkbox"/> Certain observations on the international application

Date of submission of the demand 27 March 2003 (27.03.2003)	Date of completion of this report 19 December 2003 (19.12.2003)
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PC 003/003851

I. Basis of the report

1. With regard to the elements of the international application:*

- ☒ the international application as originally filed
- ☐ the description:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the claims:
 pages _____, as originally filed
 pages _____, as amended (together with any statement under Article 19
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the drawings:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig. _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/JP 93/03851

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	5-7	YES
	Claims	1-4, 8	NO
Inventive step (IS)	Claims		YES
	Claims	1-8	NO
Industrial applicability (IA)	Claims	1-8	YES
	Claims		NO

2. Citations and explanations

Document 1: JP 62-185358 A (NEC Corporation), 13 August 1987, entire text; all drawings (Family: none)

Document 2: JP 5-62844 B2 (NEC Corporation), 9 September 1993, page 2, paragraph 3, lines 10 and 11; page 2, paragraph 4, lines 7 to 16; fig. 3 (Family: none)

Document 3: JP 8-274553 A (Nippon Telegraph and Telephone Corporation), 18 October 1996, entire text; all drawings (Family: none)

Document 4: JP 11-88079 A (Hitachi, Ltd.), 30 March 1999, entire text; all drawings (Family: none)

The inventions set forth in claims 1 to 4 and 8 lack novelty in the light of document 1 cited in the international search report.

Moreover, the preliminary circuit converts 50Ω into 40Ω, and is therefore an impedance conversion circuit.

In addition, as indicated in newly cited documents 3 and 4, it is known that the distributed amplifier set forth in document 1 carries out matching within the frequency range of 1 digit or more.

The inventions set forth in claims 1 to 8 do not involve an inventive step in the light of document 2 or documents 1 and 2 cited in the international search report.

Document 2 sets forth a signal amplifier provided with a pre-stage circuit and a post-stage circuit, wherein the output impedance of the aforementioned pre-stage circuit and the input impedance of the post-stage circuit are matched to an impedance higher than the output impedance of the aforementioned post-stage circuit.

However, document 2 (page 2, paragraph 3, lines 10 and 11) contains the wording "bandwidth $Bw \propto (gm/Z_o Z_o)$ " and document 2 (page 2, paragraph 4, lines 7 to 16) contains the wording "the characteristic impedance of the interstage circuit is set to the I/O characteristic impedance of a microwave monolithic integrated circuit, for example larger than 50Ω , to 60Ω for example... and if the total gate width is the same, bandwidth Bw will become narrower, but it will be possible to obtain high gain at the same power". Broadening bandwidth is a common issue in this field, therefore conversely, it would be easy for a person skilled in the art to conceive of lowering the characteristic impedance of the interstage circuit in order to broaden bandwidth Bw .

As indicated in newly cited documents 3 and 4, it is known that the distributed amplifier set forth in document 1 carries out matching within the frequency range of 1 digit or more.

It is a known feature not requiring prior art documents to be listed to employ an emitter follower circuit or a source follower circuit and a differential circuit as an impedance conversion circuit which converts

impedance to a lower value.

In addition, document 2 indicates that the output portion of a pre-stage circuit and the input portion of a post-stage circuit are connected via a capacitor.